IN THE CLAIMS:

1. (original): A gas discharge laser comprising a laser gas containing fluorine comprising:

an elongated gas discharge electrode comprising an electrode body having a centerline axis;

a pair of side walls on either side of the centerline axis;

an elongated preionization tube extending longitudinally beside the elongated gas discharge region on a preionizer side of the elongated gas discharge electrode;

a crown straddling the centerline axis between the pair of side walls and the pair of end walls, comprising a first material, forming at least a portion of the discharge region of the electrode;

the pair of side walls being generally flat in traverse cross section in the region of the crown;

the crown in traverse cross section having the shape of the upper half of a canted ellipse rotated in the preionizer direction, such that a tangent to the short centerline axis of the ellipse forms an angle with the horizontal.

2. (original): A fluorine gas discharge anode comprising

an anode blade having a top portion and a first and second sidewall portion each intersecting the top portion;

a front side portion on the front side of the anode blade;

a rear side portion on the rear side of the anode blade;

an asymmetric discharge side of the anode blade;

the anode blade being formed with the shape in cross section of the top portion being curvilinear and intersecting the generally straight potions of each of the first and second sidewall portions along a radius of curvature and with the top portion beveled away from the asymmetric discharge side of the anode.

3. (previously presented): A gas discharge laser having a laser gas containing fluorine, flowing through a discharge region between an anode and a cathode from an upstream flow side to a downstream flow side_comprising:

an anode and an up-stream fairing each composed of electrically conductive material, at least the discharge receiving portion of which is anodized.

4. (original): The apparatus of claim 3 further comprising:

the anode and up-stream fairing are constructed as one piece.

5. (previously presented): The apparatus of claim 3 further comprising:

at least all of the surfaces of the anode and the upstream fairing that are exposed to the laser gas are anodized.

6. (previously presented): The apparatus of claim 4 further comprising:

at least all of the exposed surfaces of the one piece anode and up-stream fairing that are exposed to the laser gas are anodized.

7. (original): The apparatus of claim 3 further comprising:

the thickness of the anodized layer on the discharge footprint of the electrode is selected according to a desired impedance and erosion resistance.

8. (original): The apparatus of claim 4 further comprising:

the thickness of the anodized layer on the discharge footprint of the electrode is selected according to a desired impedance and erosion resistance.

9. (original): The apparatus of claim 5 further comprising:

the thickness of the anodized layer on the discharge footprint of the electrode is selected according to a desired impedance and erosion resistance.

10. (original): The apparatus of claim 6 further comprising:

the thickness of the anodized layer on the discharge footprint of the electrode is selected according to a desired impedance and erosion resistance.

11. (previously presented): A gas discharge laser comprising a laser gas containing fluorine:

an elongated gas discharge anode comprising a discharge region extending longitudinally along the surface of the elongated gas discharge anode;

at least a portion of the discharge region covered with a pre-formed reef having generally uniform pore size and distribution.

12. (original): The apparatus of claim 11 further comprising:

the pre-formed reef is formed of a porous anodized material.

13. (original): The apparatus of claim 12 further comprising:

the pre-formed reef is formed of a vacuum infiltrated porous anodized material.

14. (original): The apparatus of claim 12 further comprising:

the surface of at least the discharge region is mechanically textured prior to the formation of the pre-formed reef.

15. (original): The apparatus of claim 13 further comprising:

the surface of at least the discharge region is mechanically textured prior to the formation of the pre-formed reef.

16. (original): The apparatus of claim 14 further comprising:

the surface texturing comprises a mechanically embossed surface.

17. (original): The apparatus of claim 15 further comprising:

the surface texturing comprises a mechanically embossed surface.

18. (original): The apparatus of claim 14 further comprising:

the surface texturing is applied with a mechanical punch.

19. (original): The apparatus of claim 15 further comprising:
the surface texturing is applied with a mechanical punch.

20. (original): The apparatus of claim 14 further comprising:
the surface texturing is applied by drilling seed holes.

21. (original): The apparatus of claim 15 further comprising:
the surface texturing is applied by drilling seed holes.

22. (original): The apparatus of claim 14 further comprising:
the surface texturing is applied by grit blasting.

23. (original): The apparatus of claim 15 further comprising:
the surface texturing is applied by grit blasting.

24. (original): The apparatus of claim 11 further comprising:
the preformed reef comprising a conductive material selected from the group of aluminum, copper and copper alloys.

25. (original): The apparatus of claim 12 further comprising:
the preformed reef comprising a conductive material selected from the group of aluminum, copper and copper alloys.

26. (original): The apparatus of claim 13 further comprising:
the preformed reef comprising a conductive material selected from the group of aluminum, copper and copper alloys.

27. (original): The apparatus of claim 14 further comprising:

the preformed reef comprising a conductive material selected from the group of aluminum, copper and copper alloys.

28. (original): The apparatus of claim 15 further comprising:

the preformed reef comprising a conductive material selected from the group of aluminum, copper and copper alloys.

29. (original): The apparatus of claim 16 further comprising:

the preformed reef comprising a conductive material selected from the group of aluminum, copper and copper alloys.

30. (original): The apparatus of claim 17 further comprising:

the preformed reef comprising a conductive material selected from the group of aluminum, copper and copper alloys.

31. (original): The apparatus of claim 18 further comprising:

the preformed reef comprising a conductive material selected from the group of aluminum, copper and copper alloys.

32. (original): The apparatus of claim 19 further comprising:

the preformed reef comprising a conductive material selected from the group of aluminum, copper and copper alloys.

33. (original): The apparatus of claim 20 further comprising:

the preformed reef comprising a conductive material selected from the group of aluminum, copper and copper alloys.

34. (original): The apparatus of claim 21 further comprising:

the preformed reef comprising a conductive material selected from the group of aluminum, copper and copper alloys.

35. (original): The apparatus of claim 22 further comprising:

the preformed reef comprising a conductive material selected from the group of aluminum, copper and copper alloys.

36. (original): The apparatus of claim 23 further comprising:

the preformed reef comprising a conductive material selected from the group of aluminum, copper and copper alloys.

37. (previously presented): A method for producing a gas discharge electrode discharge region pre-formed reef for an elongated gas discharge electrode for a gas discharge laser comprising a laser gas containing fluorine, comprising the steps of:

forming a first anodization layer on the surface of the electrode at least in the discharge region;

removing the first anodization layer;

forming a second anodization layer on the surface of the electrode at least in the discharge region.

38. (original): The method of claim 37 further comprising the steps of:

widening the pores in the second anodization layer.

39. (original): The method of claim 38 further comprising the steps of:

thinning the second anodization layer.

40. (previously presented): The method of claim 39 further comprising the steps of:

filling the pores with a conductive material.

41. (previously presented): A method for producing a gas discharge electrode discharge region pre-formed reef for an elongated gas discharge electrode for a gas discharge laser comprising a laser gas containing fluorine, comprising the steps of:

forming a reef template on at least the discharge region of the elongated gas discharge region;

selectively growing a porous layer of insulating material as dictated by the reef template.

42. (previously presented): The method of claim 41 further comprising:
using a positive reef template.

43. (previously presented): The method of claim 41 further comprising:
using a negative reef template.

44. (previously presented): The method of claim 42 further comprising:
the positive reef template comprises a pattern of depositions of a reef enhancing material on at least the discharge region.

45. (previously presented): The method of claim 43 further comprising:
the negative reef template comprises a pattern of depositions of reef inhibiting material on at least the discharge region.

46. (previously presented): The method of claim 44 further comprising:
the reef enhancing material is lead.

47. (previously presented): The method of claim 45 further comprising:
the reef inhibiting material is zinc.

48: (previously presented): The method of claim 44 further comprising:
the reef extend beyond the boundary of each respective deposition of reef enhancing material.

49. (previously presented): The method of claim 45 further comprising:
the reef grows over at least a portion of each respective deposition of reef inhibiting material.

50. (previously presented): The method of claim 44 further comprising:
the reef template is diffused into the surface of at least the discharge region.

51. (previously presented): The method of claim 45 further comprising:
the reef template is diffused into the surface of at least the discharge region.

52. (previously presented): The method of claim 46 further comprising:
the reef template is diffused into the surface of at least the discharge region.

53. (previously presented): The method of claim 47 further comprising:
the reef template is diffused into the surface of at least the discharge region.

54. (previously presented): The method of claim 48 further comprising:
the reef template is diffused into the surface of at least the discharge region.

55. (previously presented): The method of claim 49 further comprising:
the reef template is diffused into the surface of at least the discharge region.

56. (previously presented): The method of claim 50 further comprising:
the reef is formed during normal operation of the gas discharge laser.

57. (previously presented): The method of claim 51 further comprising:
the reef is formed during normal operation of the gas discharge laser.

58. (previously presented): The method of claim 52 further comprising:
the reef is formed during normal operation of the gas discharge laser.

59. (previously presented): The method of claim 53 further comprising:
the reef is formed during normal operation of the gas discharge laser.

60. (previously presented): The method of claim 54 further comprising:
the reef is formed during normal operation of the gas discharge laser.

61. (previously presented): The method of claim 55 further comprising:
the reef is formed during normal operation of the gas discharge laser.

62. (previously presented): The method of claim 50 further comprising:
the reef is formed by exposure to energized fluorine during manufacturing.

63. (previously presented): The method of claim 51 further comprising:
the reef is formed by exposure to energized fluorine during manufacturing.

64. (previously presented): The method of claim 52 further comprising:
the reef is formed by exposure to energized fluorine during manufacturing.

65. (previously presented): The method of claim 53 further comprising:
the reef is formed by exposure to energized fluorine during manufacturing.

66. (previously presented): The method of claim 54 further comprising:
the reef is formed by exposure to energized fluorine during manufacturing.

67. (previously presented): The method of claim 55 further comprising:
the reef is formed by exposure to energized fluorine during manufacturing.